

Program Information Sheet

Program Name

Climate Variability and Predictability (CVP) Program

Program Mission

The Climate Variability and Predictability (CVP) Program supports research that enhances our process-level understanding of the climate system through observation, modeling, analysis, and field studies. This vital knowledge is needed to improve climate models and predictions so that scientists and society can better anticipate the impacts of future climate variability and change. The CVP Program sits within the Earth System Science and Modeling (ESSM) Division of the NOAA Office of Oceanic and Atmospheric Research (OAR) Climate Program Office (CPO). CVP is a critical component of the integrated research enterprise at CPO and maintains important connections to the other CPO program areas, such as Ocean Observations and Monitoring Division (OOMD) and MAPP (Modeling, Analysis, Predictions and Projections).

To achieve its mission, the CVP Program supports research carried out at NOAA and other federal laboratories, NOAA Cooperative Institutes, and academic institutions. The Program also coordinates its sponsored projects with major national and international scientific bodies including the World Climate Research Programme (WCRP), the International and U.S. Climate Variability and Predictability (CLIVAR/US CLIVAR) Program, and the U.S. Global Change Research Program (USGCRP). The CVP program sits within NOAA's Climate Program Office (<http://cpo.noaa.gov/CVP>).

Focus for FY19

Competition 1: CVP-Decadal Climate Variability and Predictability

In FY19, CVP is interested in data analysis and/or coupled-modeling studies focused on the state and process-level understanding of the ocean and atmosphere on the interannual to multi-decadal timescales in the following two priority areas:

- Investigation of mechanisms that govern variability of the coupled climate system and its predictability on the interannual to multi-decadal timescales within long-term observation data and/or model data (such as, CMIP6), with a focus on either the Atlantic or Pacific Ocean region.
- Investigation of the relationship between the Atlantic Meridional Overturning Circulation (AMOC) and global and regional sea level (historical, current, and/or future), with a focus on understanding sea level extremes and coastal impacts in the United States, for the improved understanding of the ocean-climate system.

The goal of this work is to identify state, mechanisms, and sources of predictability on the interannual to decadal timescale, which will help to lead to future improvements in skillful decadal prediction systems for climate (ocean and atmosphere).

Funding for FY19

Competition 1: It is anticipated that there will be \$1.5M available in FY19 for **Competition 1: CVP-Decadal Climate Variability and Predictability**. It is anticipated that most awards will be at a funding level between \$150,000 and \$300,000 per year for up to 3 years, depending on the availability of funding. Projects will start in FY19 or FY20, depending on the needs of the project and the availability of funding.

Competition Information

Competition 1: CVP-Decadal Climate Variability and Predictability

The Climate Variability and Predictability (CVP) Program supports research that enhances our process-level understanding of the climate system through observation, modeling, analysis, and field studies. This vital knowledge is needed to improve climate models and predictions so that scientists and society can better anticipate the impacts of future climate variability and change.

Recent research findings confirm that the primary driver of climate variability on the decadal to multi-decadal timescales is the ocean. This motivates the need for quantifying the mechanistic relationships between ocean and atmosphere so that we can better describe these variations, how well they are coupled, and how well our models perform at simulating them. The goal of this work is to identify state, mechanisms, and sources of predictability on the interannual to decadal timescale, which will help to lead to future improvements in skillful decadal prediction systems for climate (ocean and atmosphere).

There is ongoing national and international research interest in decadal variability and predictability and the role of the ocean. For example, WCRP's International CLIVAR has a specific community-driven research foci, to address specific science questions related to decadal climate variability and predictability (DCVP) ([Int. CLIVAR Science Plan And Implementation Strategy \(Draft\)](#), 2018). U.S. CLIVAR also supports an interagency-funded [US Atlantic Meridional Overturning Circulation \(AMOC\) Science Team](#), which focuses on the role of the Atlantic Ocean circulation in ocean and climate variability. In the recent ["2018 US AMOC Report on Progress and Priorities"](#) several near- and long-term priorities for ongoing research were identified.

In FY19, CVP is interested in data analysis and/or coupled-modeling studies focused on the state and process-level understanding of the ocean and atmosphere on the interannual to multi-decadal timescales in the following two priority areas:

- Investigation of mechanisms that govern variability of the coupled climate system and its predictability on the interannual to multi-decadal timescales within long-term observation data and/or modeling data (such as, CMIP6), in the CMIP6 model data, with a focus on either the Atlantic or Pacific Ocean region.
- Investigation of the relationship between the Atlantic Meridional Overturning Circulation (AMOC) and global and regional sea level (historical, current, and/or future), with a focus on understanding coastal impacts and sea level extremes in the

United States, for the improved understanding of the ocean-climate system.

Data Archiving

Data Management Guidance

The Responsible NOAA Official for questions regarding this guidance and for verifying accessibility of data produced by funding recipients: Sandy Lucas, sandy.lucas@noaa.gov

Data Accessibility: The CVP Program requires that public access to grant/contract-produced data be enabled in one of the following ways (select one):

- ☐ Funding recipients are planning to submit data to NOAA National Centers for Environmental Information (NCEI), which will provide public access and permanent archiving¹. Point of Contact for NCEI is Nancy Ritchey (Nancy.Ritchey@noaa.gov)
- ☐ Data are to be submitted to an International Council for Science (ICSU) World Data System facility: <https://www.icsu-wds.org/community/membership/regular-members>)
- ☐ An existing publicly accessible online data server at the funded institution is to be used to host these data (describe in proposal).
- ☐ Data are to be submitted to a public data repository appropriate to this scientific domain (describe in proposal).
- ☐ Proposal may request permission not to make data publicly accessible (proposal to explain rationale for lack of public access, and if funded approval to be obtained from Responsible NOAA Official listed above).
- ☐ Archival of data at an established Cloud Computing facility, if cost effective and reliable

Technical recommendations:

The CVP Program requires the following data format(s), data access method(s), or other technical guidance:

- ☐ Data must be made available in a common machine-readable non-proprietary format with appropriate metadata and clear labels and descriptors. Use of netCDF is encouraged.
- ☐ Data should be available via public and discoverable data portals, as described above.
- ☐ At a minimum, investigators should plan to archive and make available modeling data used in producing any figures in publications from research supported by their grants, as well as data that support conclusions reached in papers or stated publicly. Only those data which are necessary for demonstrating reproducibility of published results need be archived and made public unless otherwise required as part of the solicitation.
- ☐ In situ observational data collected during the field campaign should be made freely available to the public either 2 years after collection and validation or at the time of publication, whichever is sooner.

¹ NCEI supports the creation of adequate metadata and data ingest into long term repository holdings using tools such as Send2NCEI (www.nodc.noaa.gov/s2n, for small volume, one-time only data collections) and Advanced Tracking and Resource tool for Archive Collections or ATRAC (www.ncdc.noaa.gov/atrac, for recurring and/or large volume data collections).

- ☐ Model data should be made available for at least 3 years after it is initially published or made otherwise publicly available.

Resources:

Proposals are permitted to include the costs of data sharing and/or archiving in their budgets within solicitation specified proposal cost limit. Proposed methods and approaches should use reasonable means to minimize data management costs.

Program Contact information:

For additional program announcement information, investigators should contact the following CVP Competition Manager: Sandy Lucas (Sandy.Lucas@noaa.gov, 301-734-1253)

Letters of Intent should be submitted directly to the Competition Manager.